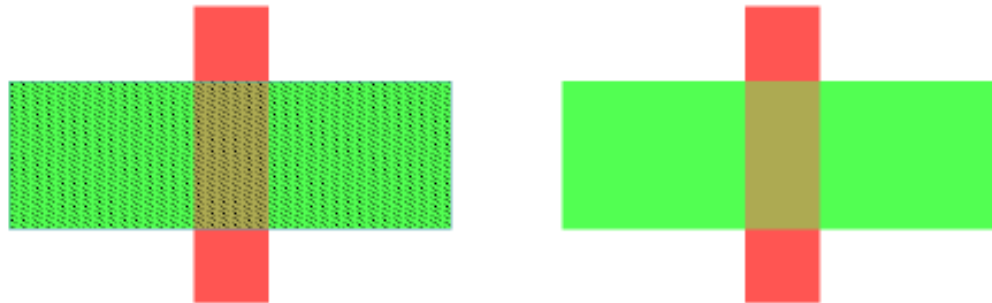
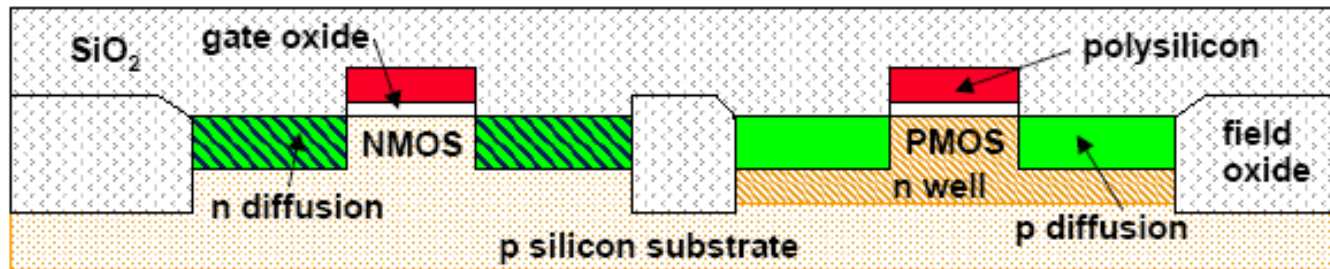


Layout of CMOS VLSI Circuits

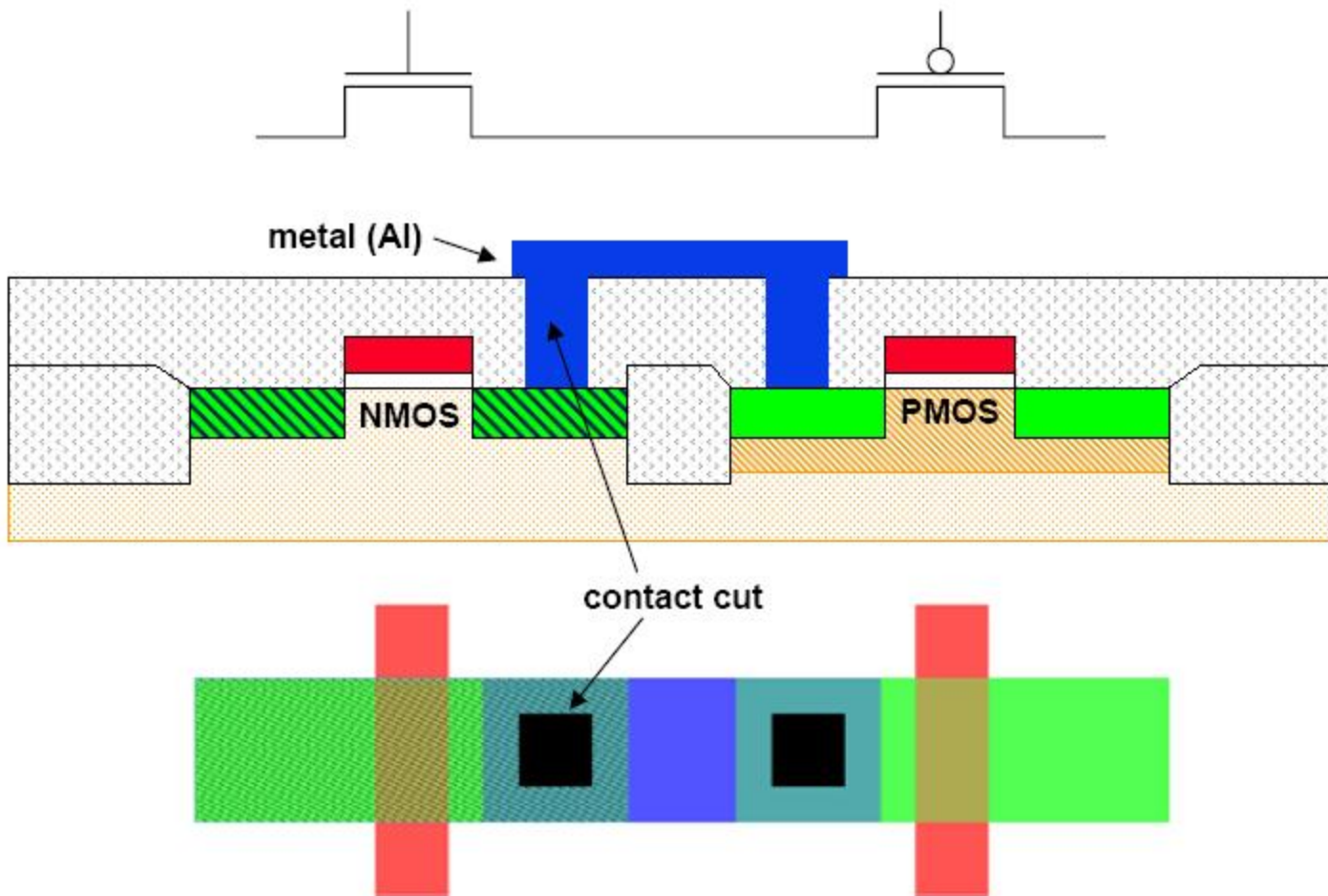
Shmuel Wimer

Bar Ilan Univ., School of Engineering

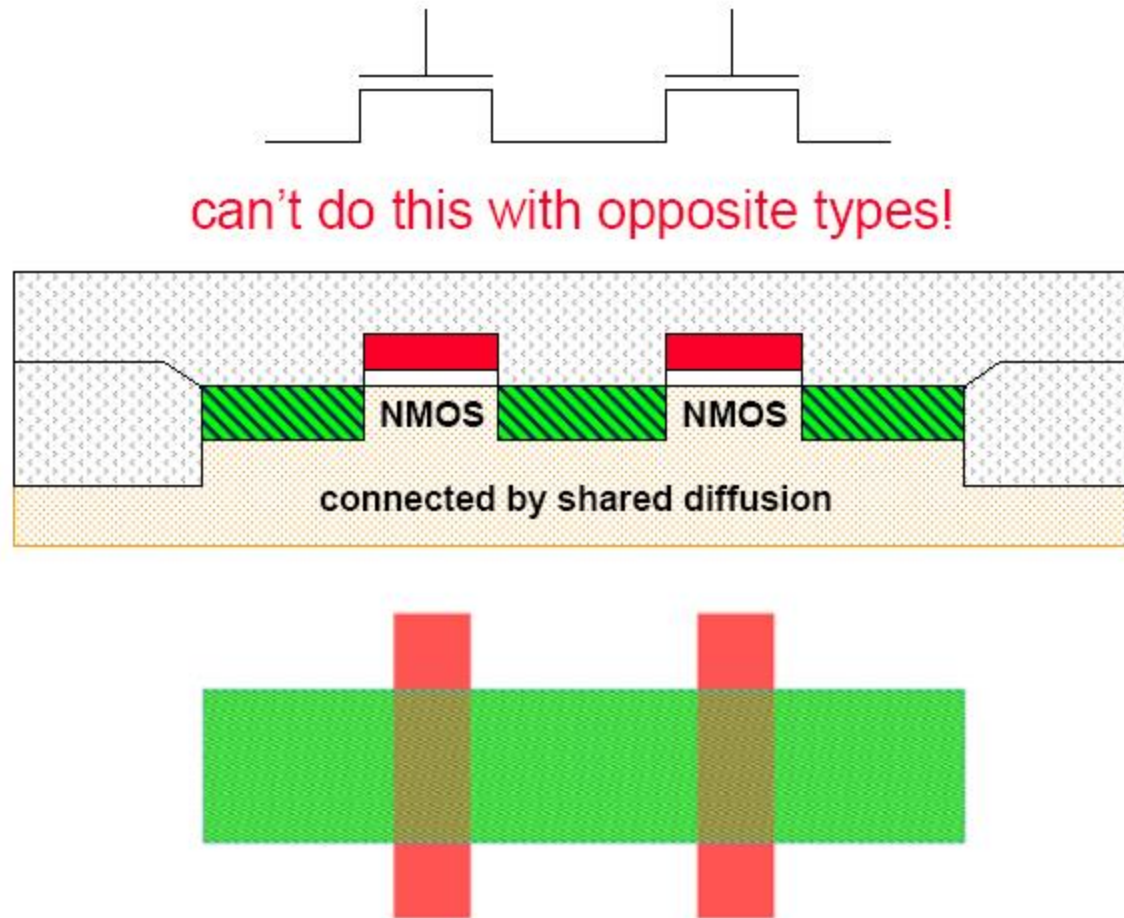
Simplified CMOS Process - Transistors



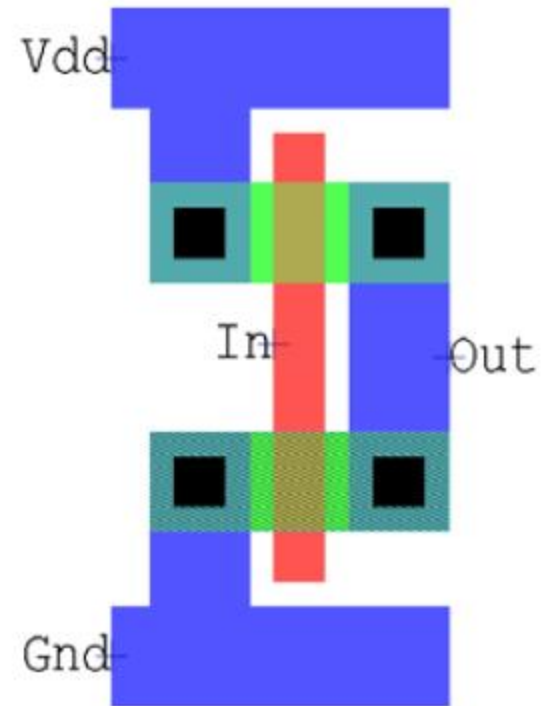
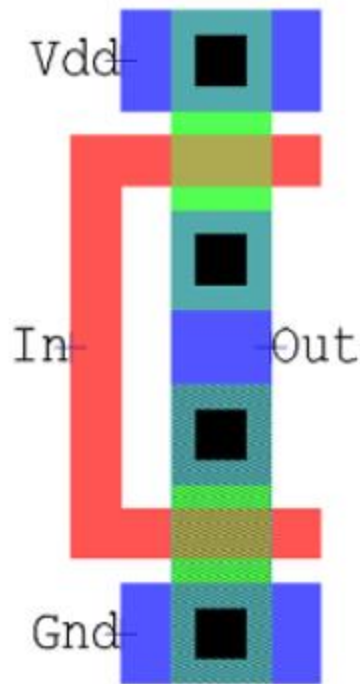
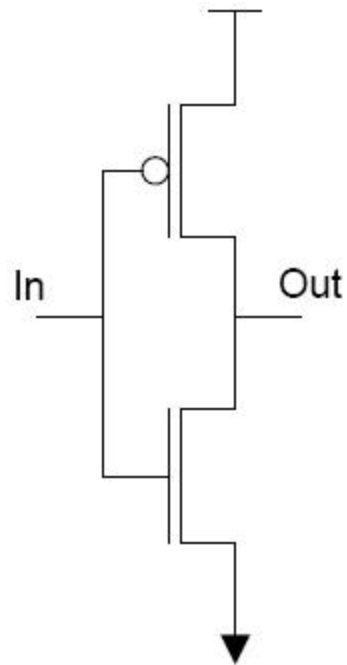
Metal P to N Connection



Serial Transistor Connection by Diffusion

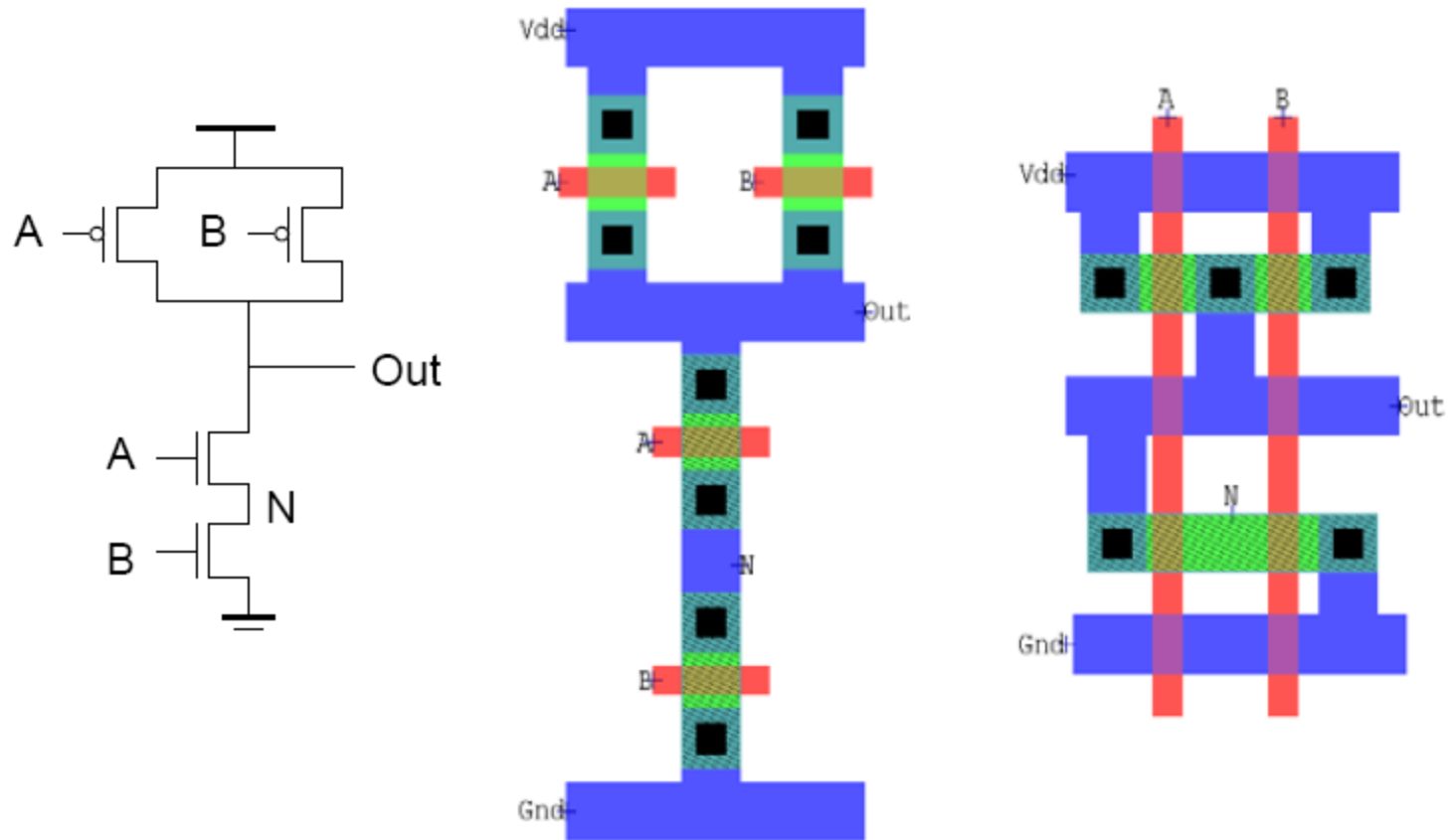


Layout of Inverter

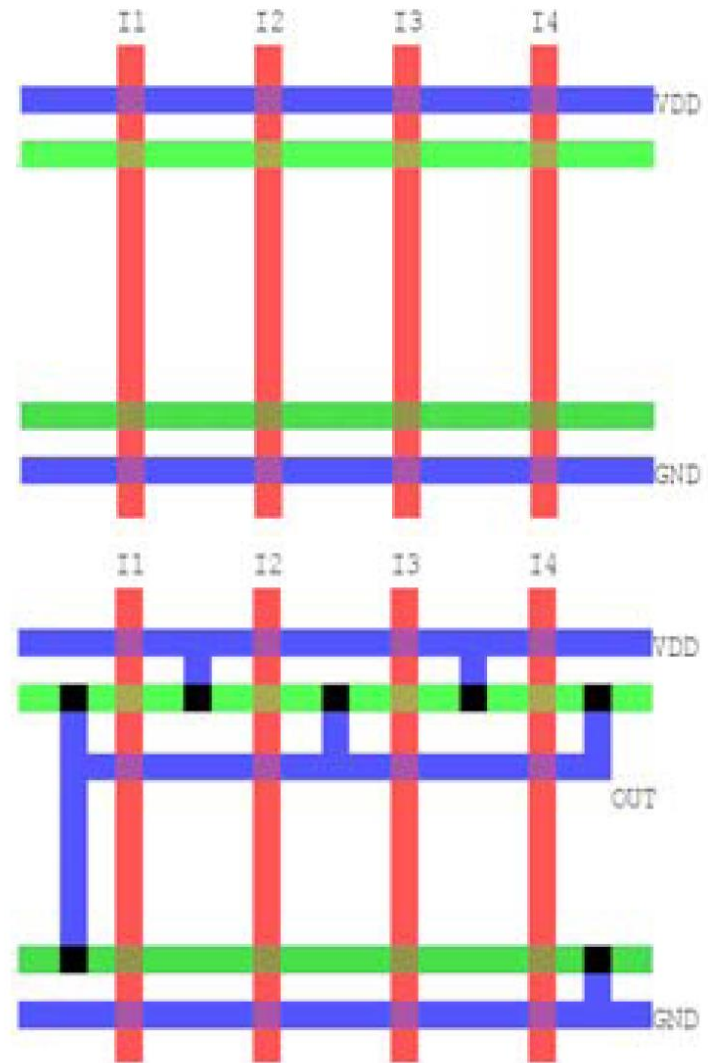
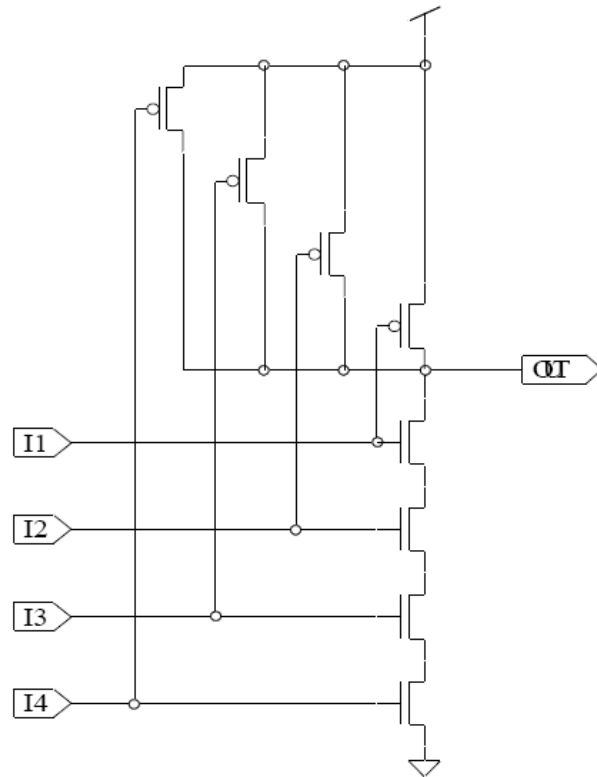


preferred

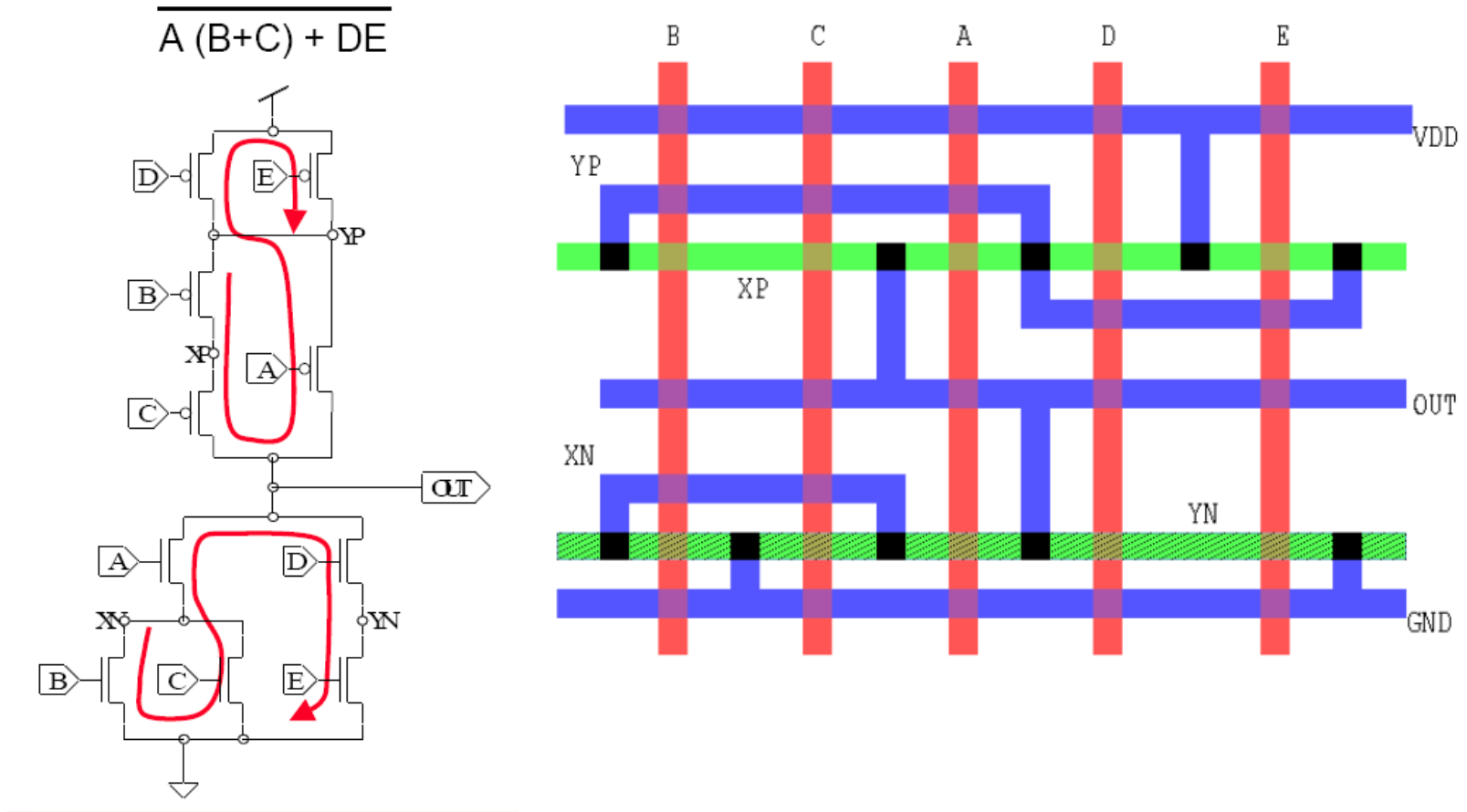
Layout of 2-Way NAND



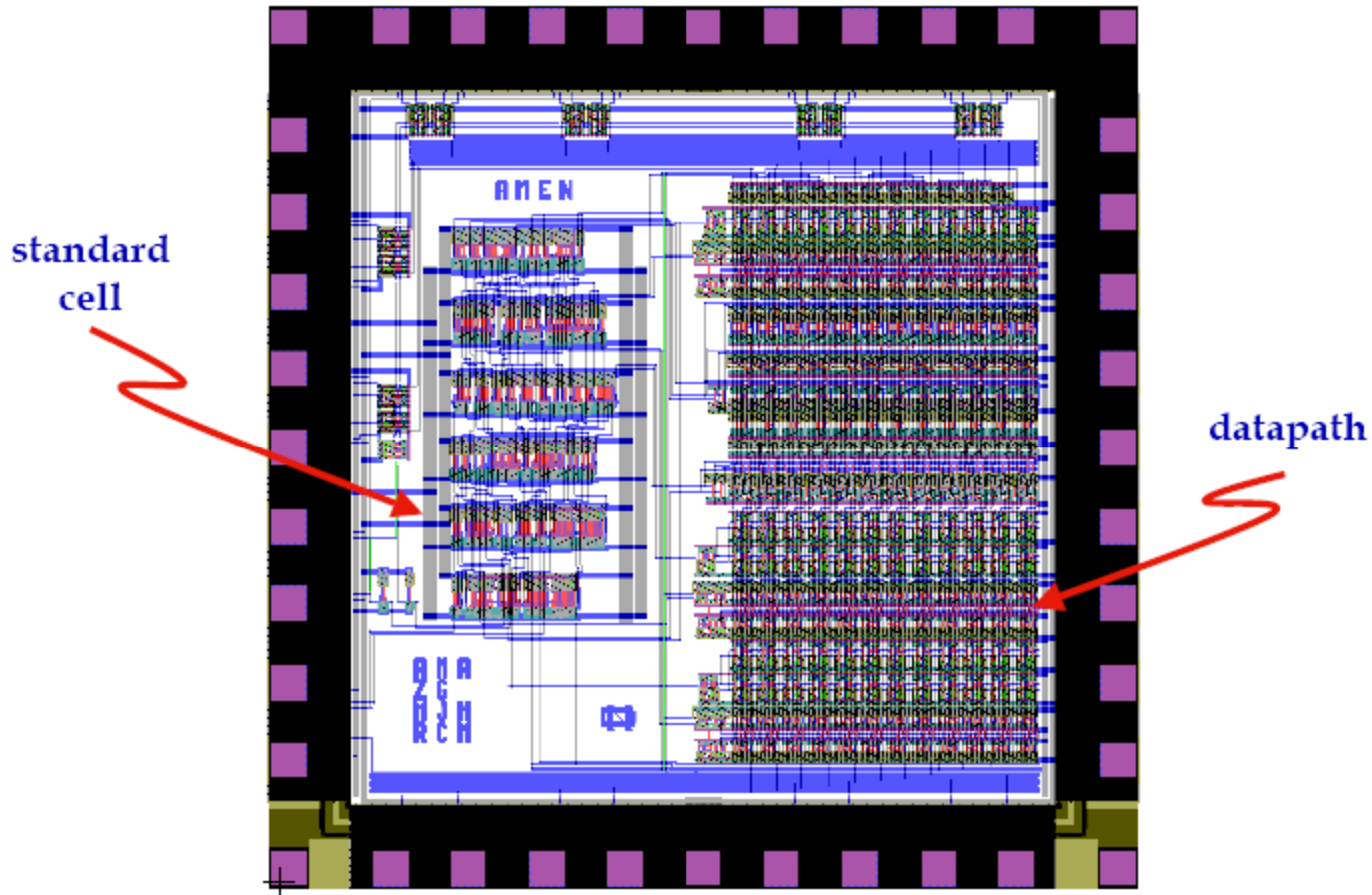
4-Way NAND Stick Layout



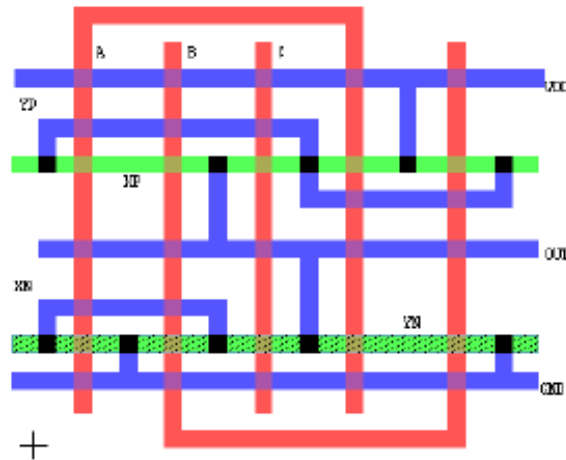
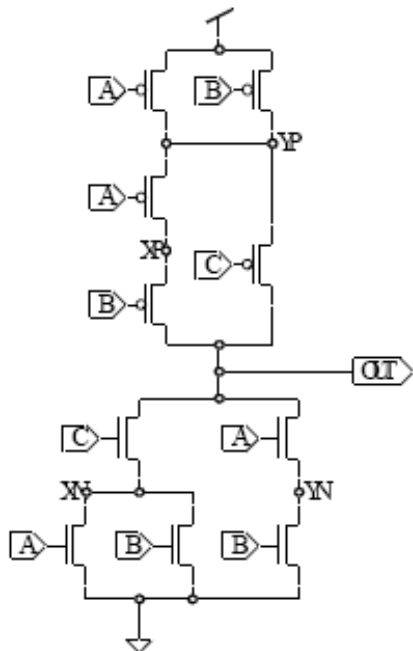
Layout of Compound Gates – Euler Path



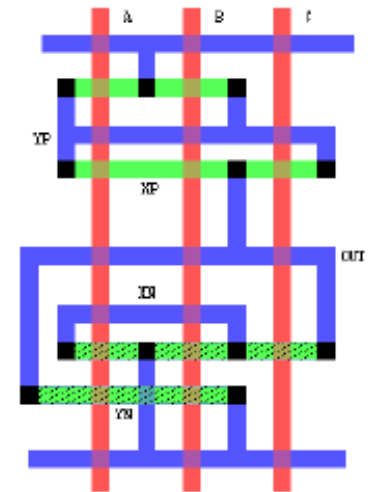
Layout Styles



$$C(A+B) + AB$$

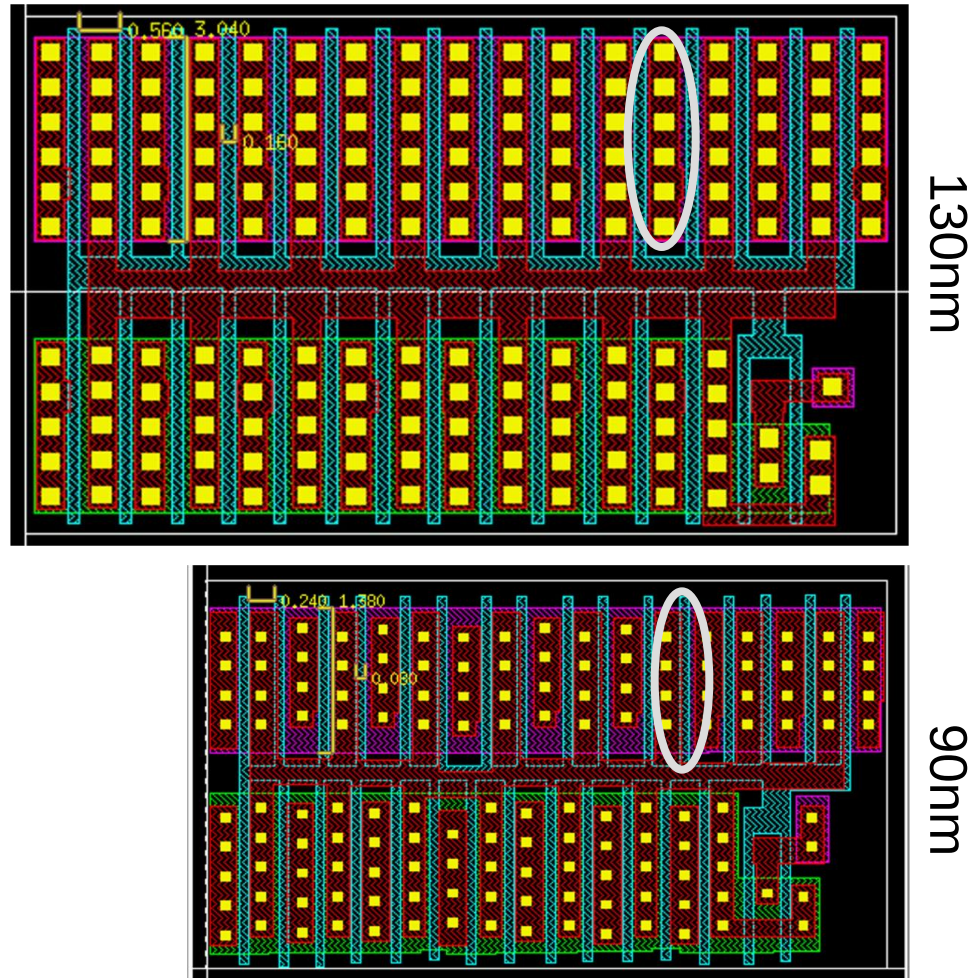


standard cell

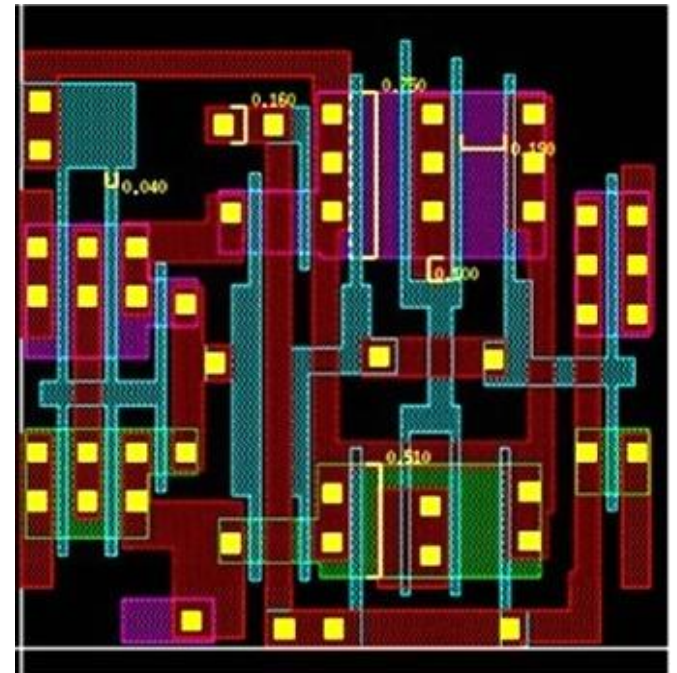
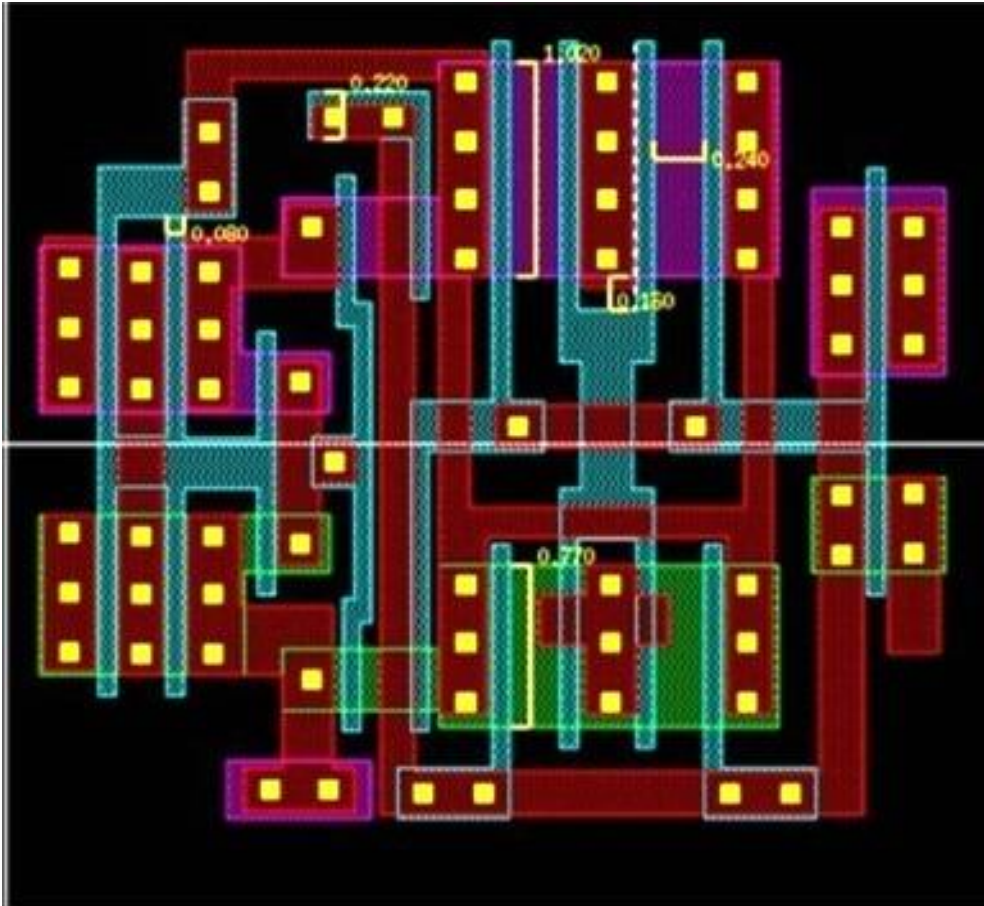


datapath

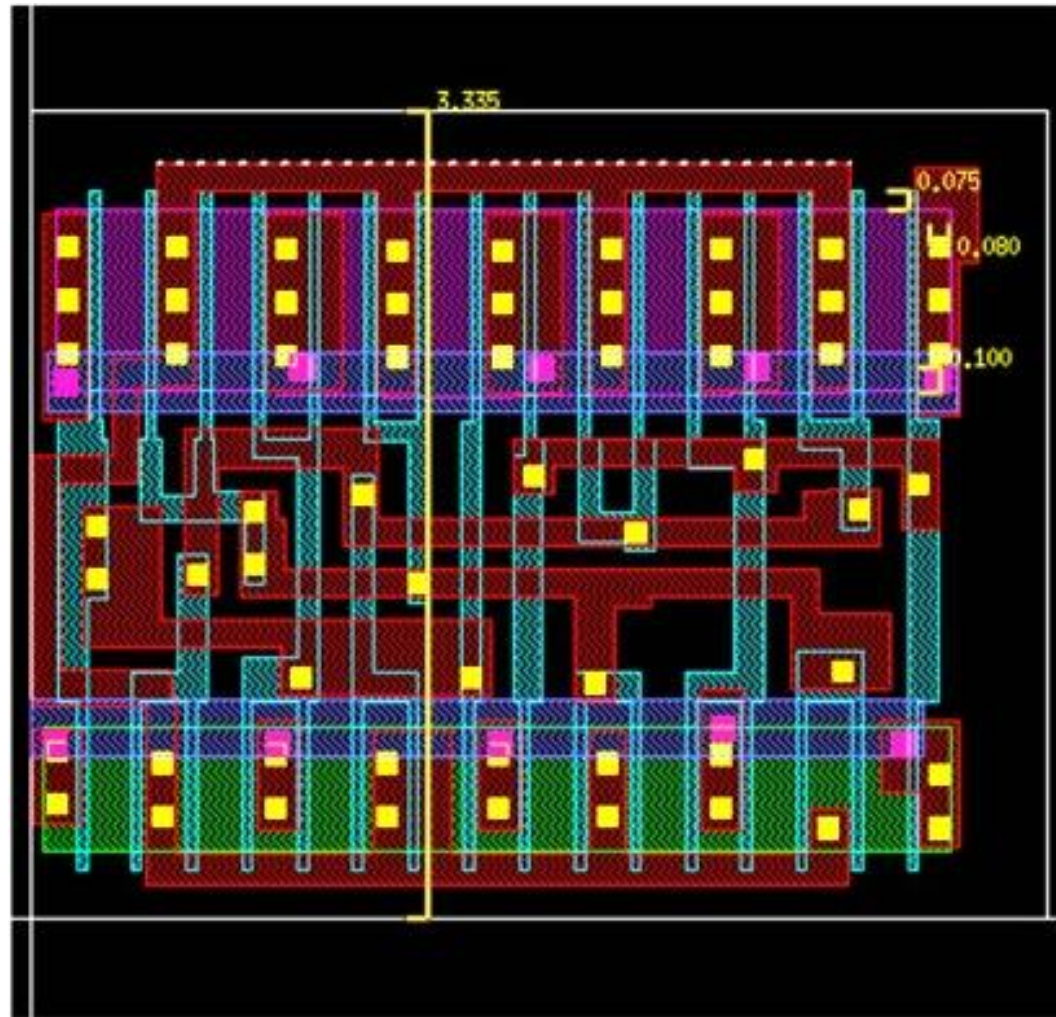
Layout in 130 and 90 Nanometers



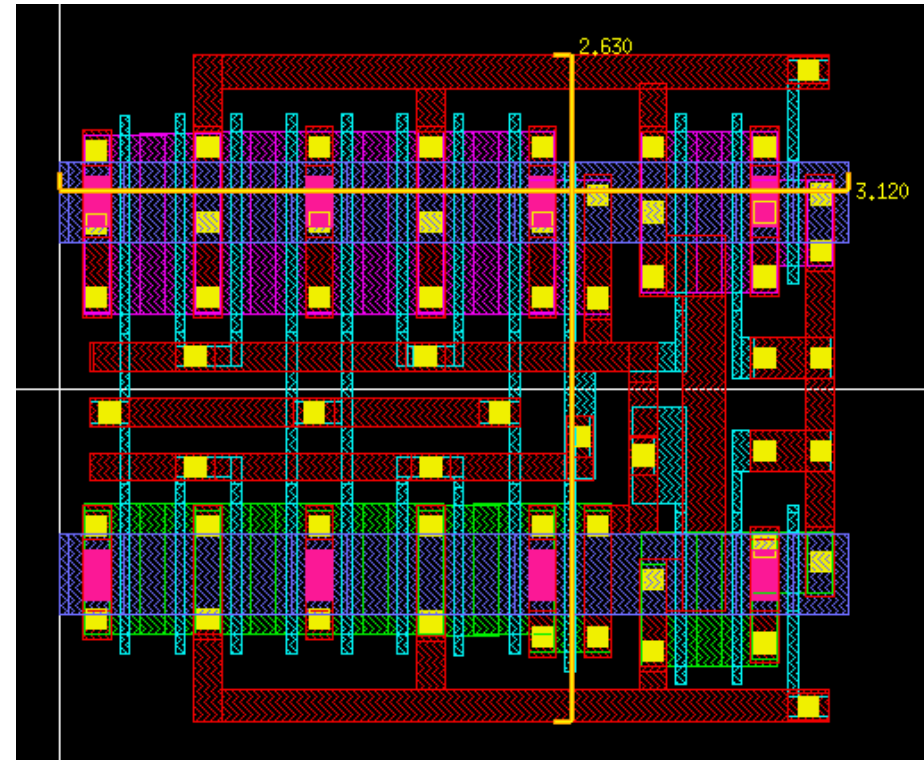
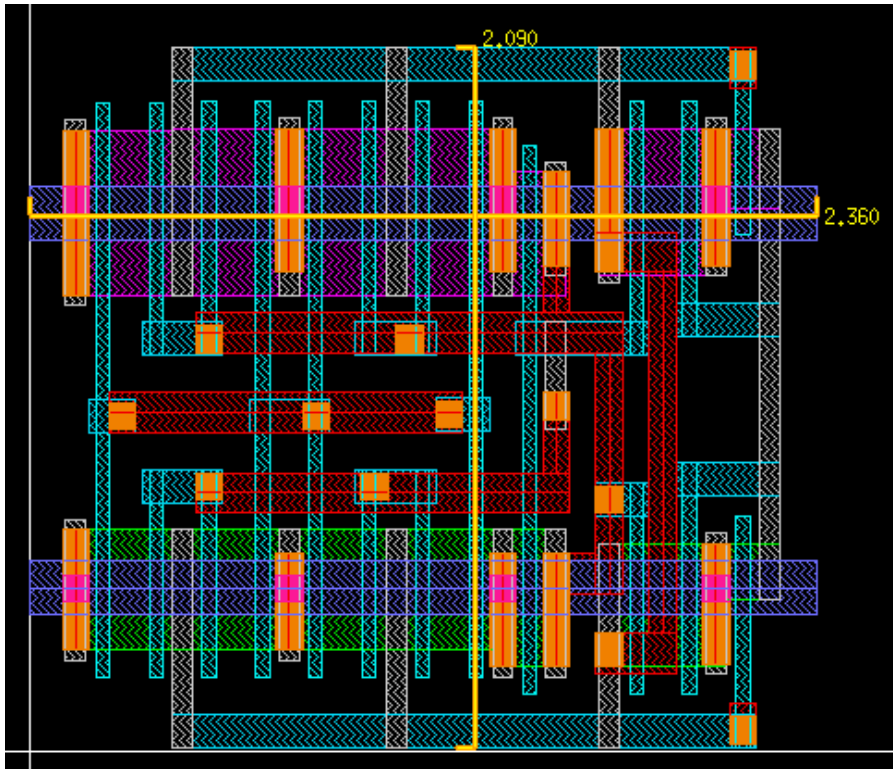
Layout in 90 and 65 Nanometers



Layout in 65 Nanometers



Layout in 65 and 45 Nanometers



Possible Layout in 32 Nanometers

